Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	WC Docket No. 04-36
IP-Enabled Services	)	

To: The Commission

COMMENTS OF NUVIO CORPORATION

Nuvio Corporation ("Nuvio"), by its attorneys, hereby files these comments in the above-captioned proceeding.[1] As discussed herein, Nuvio supports the Commission's efforts to establish a comprehensive, pro-competitive legal and regulatory framework for services and applications based on Internet Protocol ("IP") standards (collectively "IP-enabled services"). Nuvio strongly agrees with the Commission that future decisions in this area should "start from the premise that IP-enabled services are minimally regulated"[2] and that the Commission should rely "wherever possible on competition and apply[] discrete regulatory requirements only where such requirements are necessary to fulfill important policy objectives."[3]

IP-enabled services, including voice over IP ("VoIP"), have become increasingly attractive communications alternatives for consumers. These services have arisen in an environment largely free from government regulation, and offer a wide array of service

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[1] *See* In the Matter of IP-Enabled Service, *Notice of Proposed Rulemaking*, WC Docket No. 04-36, FCC 04-28 (rel. March 10, 2004) ("*NPRM*").

[2] *See id.* at ¶ 5.

[3] *See id.*

applications and communications capabilities that go well beyond those available using the traditional public switched telephone network ("PSTN").[4] To facilitate the development of these next-generation services in the highly competitive communications marketplace, the Commission should ensure that IP-enabled services remain unfettered by government regulation beyond what is absolutely necessary to further compelling policy goals.

In addition, because IP-enabled services are inherently interstate and transportable across state lines, the Commission should exercise exclusive federal jurisdictional and adopt a unified national regulatory regime for such services. In this way, the Commission can best ensure that all U.S. consumers will enjoy the benefits of increased competition and enhanced communications capabilities provided by IP-enabled services.

I. BACKGROUND ON NUVIO CORPORATION

Nuvio was founded in December 2003 to provide innovative VoIP services to U.S. residential and business customers. Nuvio's two main products are residential and small business communications service ("NuvioVoice") and an IP Centrex designed to be a PBX replacement for business ("NuvioCentrex"). Both of these products are based on Nuvio's proprietary network architecture and utilize the customer's broadband connection to the Internet to provide local, long distance and related services (*e.g.*, voicemail, enhanced services, etc.). Today, Nuvio's services are offered in 26 states throughout the country at very competitive rates.[5]

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[4] *See generally id.* at ¶¶ 1-6, 10-15

[5] For a more complete description of Nuvio and its VOIP service offerings see its web site at https://www.nuvio.com.

NuvioVoice utilizes an analog telephone adapter with a built-in router at customer locations that interfaces with a normal telephone,[6] and includes enhanced services such as caller ID, call waiting and call forwarding as standard functionality. NuvioVoice is transportable, requiring only a broadband connection, which allows users to answer their local phone number anywhere in the United States. Nuvio has also created a web portal for customers to check voice mail, minutes of usage and as a distribution platform for future applications.

NuvioCentrex is designed to be a complete replacement for an office telephone system. Similar to the NuvioVoice service, each phone connected to the NuvioCentrex has a unique phone number and communicates with the Nuvio softswitch via the Internet to place and receive calls. Because the network is Internet-based, NuvioCentrex phones located in the same office have the same connectivity and communications capabilities as NuvioCentrex phones located across the country or overseas. As a result, NuvioCentrex is a cost effective means for small businesses to obtain PBX functionality and significant communications flexibility without the cost and expense of maintaining their own PBX system.

Nuvio has concluded connectivity arrangements with interexchange carriers ("IXCs") and competitive local exchange carriers ("CLECs ") to obtain numbering resources and to originate and terminate NuvioVoice and NuvioCentrex traffic on the PSTN. Nuvio is able to offer business and residential customers these innovative, cost-effective services because of the unique architectural characteristics of IP telephony generally and the Nuvio system in particular. As important, Nuvio is able to compete as a start-up company against large, entrenched

[6] The adapter connects to the end user's broadband connection and then establishes a session with Nuvio's call processing servers, which routes calls placed by the end user to the final destination (*e.g.*, another Nuvio end user or a user connected to the PSTN). Conversely, when an incoming call is placed to a NuvioVoice customer, Nuvio's gateway server converts the phone call to an IP format, transmits it to the relevant call processing server, and then the call data is forwarded on to the end user's adapter where the telephone rings.

telecommunications service providers because the Commission has taken a "hands off" approach with respect to regulation of IP-enabled services. Nuvio urges the Commission to maintain this approach to preserve and enhance competition in the rapidly evolving communications marketplace.

II. THE COMMISSION SHOULD NOT REGULATE IP-ENABLED SERVICES BASED ON FUNCTIONALITY

In the *NPRM*, the Commission "expressly recognize[d] the possibility that [it] ultimately will need to differentiate among various IP-enabled services" for regulatory purposes.[7] In particular, the Commission identified a number of functional and economic factors that might be used to categorize services, including (i) functional equivalence to traditional telephony; (ii) substitutability; (iii) interconnection with the PSTN and use of the North American Numbering Plan; (iv) peer-to-peer communications versus network services; and (v) facility layer versus protocol layer versus application layer services.[8] Nuvio believes, however, that any effort to categorize IP-enabled services based on functionality or features ultimately will prove counterproductive.

IP-enabled services, and in particular VoIP applications, involve dynamic and ever-changing technologies and service architectures that cannot fit neatly into pre-defined categories of services that would make only some providers subject to regulation. Because the technology is still in its infancy, the extent of its service applications and features or functionality cannot be adequately determined or anticipated. Many VoIP provides will offer unique, consumer-driven services that will make categorization based on features or functionality essentially impossible.

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[7] *See NPRM* at ¶ 5; *see also id.* at ¶¶ 35-37.

[8] *See id.* at ¶ 37.

In addition, there are no clear dividing lines between various types of VoIP services. For example, regulating VoIP services that utilize phones to interconnect to the computer but not "computer-to-computer" or "computer-to-phone" VoIP services that use some other type of interconnection device makes little sense when the same VoIP services can be provided to end users. Indeed, it is difficult if not impossible to develop a workable distinction between such services, and any efforts to develop such definitions will inevitably engender technical workarounds and "smoke and mirror" system architectures to avoid potential regulation. Thus, it is ultimately futile if not counterproductive for the Commission to attempt to distinguish between VoIP services.

Nuvio would note, however, that the "layered" approach to regulation noted by the Commission may well have a place in developing a comprehensive VoIP policy.[9] Rather than regulating IP-enabled services based on functionality or features, the Commission should examine the various layers used in the provision of IP-enabled services (facility layer, protocol layer and application layer) and regulate, to the extent necessary, those layers where incumbents can exercise market power or otherwise control access to bottleneck facilities. For example, the Commission should seek to preclude incumbent services providers that own bottleneck facilities from restricting access to "last-mile" networks or otherwise discriminating against competitive application providers in favor of their own IP-enabled services. Conversely, there is no need to regulate competing services on the application layer offered by service providers that do not own the underlying transport facilities (assuming all application service providers have equivalent access to the underlying transport facilities).

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[9] *See supra* n. 8 and accompanying text. Nuvio believes that the last set of factors enunciated by the Commission (examining facility, protocol and application layers) actually constitutes a separate "layered" approach to regulation that focuses on control of facilities and competition within and among the various layers, rather than on service functionality or features.

The Commission should remain mindful, however, of the market power and monopoly control of transport facilities enjoyed by ILECs. Even at the application layer, these factors give ILECs substantial advantages with respect to traditional telecommunications services as well as new VoIP offerings. Thus, regulation is needed to safeguard consumers and ensure that ILECs do not use their market power and control over bottleneck facilities to obtain an unfair competitive advantage over unaffiliated IP-enabled service providers.

III. THE COMMISSION SHOULD ADOPT A UNIFIED NATIONAL REGULATORY REGIME FOR IP-ENABLED SERVICES

The Commission seeks comment on the jurisdictional nature of IP-enabled services. Among other issues, the Commission asks whether and on what basis IP-enabled services should be subject to exclusive federal jurisdiction.[10] Nuvio believes it is essential that IP-enabled services, including VoIP, be subject to a unified national regulatory policy rather than a myriad of disparate state requirements.

Nuvio's VoIP offerings are inherently interstate services and should be subject only to federal regulatory jurisdiction. In the context of traditional telecommunications services, the Commission examines whether a call is intrastate or interstate based on its end points.[11] However, this analysis is inappropriate in the context of IP-enabled services. For example, because Nuvio's VoIP service is fully transportable and can be accessed from any location without a change in telephone number, the origination and termination points are not always known and can change from one moment to the next. In similar circumstances, the Commission

[10] *See NPRM* at ¶¶ 40-41.

[11] *See id.* at ¶ 40.

has concluded that its end-to-end jurisdictional analysis is inappropriate.[12] Furthermore, because it is technologically infeasible to separate the intrastate portion from the interstate portion of VoIP services, the Commission should consider such services to be interstate services based on its "mixed use" doctrine.[13] Accordingly, IP-enabled services such as VoIP are plainly interstate services subject solely to federal jurisdiction.

Over the past several months, however, certain states have implemented or are considering implementing measures to regulate VoIP services.[14] The possibility that VoIP providers may be subject to 50 different regulatory regimes would cripple this emerging industry. Disparate state regulation would significantly undermine the development and deployment of IP-enabled services and would have practical difficulties to administer. For example, a customer could sign up for VoIP service in one state that allows this service and keep the same number but move to another state that does not allow the exact same service without the service provider or regulator knowing about it. State regulation would also give incumbent communications services providers, who are intimately familiar with such regimes, an insurmountable competitive advantage. This runs directly contrary to the Commission's pro-competitive and deregulatory policies for next-generation services.

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[12] *See id.* at ¶ 39 (traditional end-to-end jurisdictional analysis is inappropriate in the context of portable Internet-based service).

[13] *See id.*

[14] *See, e.g.,* "States, feds headed for VOIP clash" (May 20, 2004) available at <http://news.com.com/States%2C+feds+headed+for+VoIP+clash/2100-7352_3-5217512.html?tag=guts_lh_7352>.

In sum, because state regulation would undermine valid Commission regulatory objectives and it is not possible to separate the interstate and intrastate aspects of IP-enabled services, the Commission should exercise exclusive federal jurisdiction over such services.[15]

IV. COMPETITIVE MARKET FORCES AND EXISTING COMMISSION REQUIREMENTS GENERALLY ADDRESS THE OTHER SPECIFIC REGULATORY ISSUES RAISED IN THE *NPRM*

IP-enabled services, including VoIP, will deliver new and exciting communications capabilities to U.S. residential and business customers. Because IP-enabled services will ultimately compete head-to-head with traditional telecommunications services, the marketplace will require the same basic capabilities (*e.g.*, access to emergency services) from IP-enabled services. Presently, however, IP-enabled services constitute only a small fraction of U.S. traffic and these services are not complete substitutes for traditional PSTN services. Thus, it is premature to impose the same range of regulatory requirements on this nascent industry, particularly when market forces are already bringing essential capabilities, as well as expanded functionality, to IP-enabled services.

Regulatory requirements designed to address transfers of costs and payments among monopoly owners of telecommunications facilities also have little place in the context of Internet-based services. Although IP-enabled service providers comply with existing requirements in the context of their arrangements to access the PSTN, there is no basis to extend such requirements to IP-enabled services generally. Similarly, IP-enabled service providers already contribute significantly to the Commission's universal service goals through carrier contracts, and indeed through their offerings dramatically expand the availability and lower the

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[15] *See NPRM* at ¶ 41 (*citing Texas Office of Pub. Util. Counsel v. FCC*, 183 F.3d 393, 422 (5th Cir. 1999)).

costs of communications services to high-cost and rural areas. Indeed, VoIP is an application that is driving the deployment of broadband to rural and high-cost areas.[16]

The *NPRM* raised a number of specific regulatory issues with respect to IP-enabled services, including public safety and disability access, intercarrier compensation, universal service, consumer protection and the need for economic (common carrier) regulation. Nuvio believes that market forces in the highly competitive communications services marketplace, as well as existing Commission requirements applicable to IP-enabled service provider relationships with traditional carriers, ultimately will tackle all of these issues. Accordingly, the Commission should afford sufficient time for this nascent industry to develop and voluntarily address these issues before imposing burdensome mandates that could significantly undermine the viability of IP-enabled services.

A. Public Safety and Disability Access

The VoIP industry has taken a proactive approach with respect to access to emergency services. Some VoIP providers are already providing 911 services to customers and using this as a market differentiator from their competitors. In addition, in December 2003, the National Emergency Number Association ("NENA") and the Voice on the Net ("VON") Coalition reached a voluntary agreement on approaches to provide VoIP subscribers with basic 911 service, and to work together to develop solutions to permit VoIP subscribers to obtain E911 functionality.[17] Although technical challenges certainly exist (*e.g.*, difficulties associated with

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[16] *See* Submissions to Congressional Internet Caucus Advisory Committee, "VOIP: Why is it not your parents' Plain Old Telephone Service (POTS?)" (March 16, 2004), available at <http://www.netcaucus.org/events/2004/voip/onepagers/>; *see also* "Lawmakers Tout Tariff Free VoIP Bill" (April 2, 2004), available at <http://www.internetnews.com/xSP/article.php/3335321>.

[17] *See NPRM* at ¶ 56.

VoIP service portability), voluntary industry efforts will lead to suitable solutions for access to emergency services.

Nuvio believes that it is premature to mandate specific emergency services requirements. While some functionality exists today, VoIP technology and industry solutions have not yet evolved to a point where specific timetables or features can be established. Furthermore, VoIP services have not yet reached a level of market penetration such that mandating specific emergency services capabilities is required.[18] Although the Commission may ultimately view it necessary to implement emergency services support requirements as VoIP services become more prevalent, it is premature to make any such determinations at this time.

With respect to disability access, the convergence of voice, video, text and data in the context of IP-enabled services will provide a wide range of new communications options for persons with disabilities. Rather than relying on the Telecommunications Relay Service ("TRS") or similar common carrier mandates, which were developed to force monopoly communications providers to offer disability access services, market forces will undoubtedly result in communications capabilities for the disabled. The communications capabilities associated with disability access, including as teletypewriter ("TTY"), IP Relay and Video Relay Service ("VRS"), are at the very core of IP-enabled service functionality. It is likely that these capabilities, which were novel and expensive to implement in an environment of circuit-switched monopoly providers, will become standard components of IP-enabled services offerings. Of course, to the extent that VoIP providers do not address these needs quickly and efficiently, IP-enabled service providers specializing in disability access could easily fill gap. Thus, the

[18] For example, many VoIP services are marketed as secondary line services and customers are fully informed of the limitations on access to emergency services associated with the service.

Commission should refrain from disability access mandates and allow the competitive forces associated with IP-enabled services fill these and other important communications needs.

B. Intercarrier Compensation

The Commission has recognized that its existing access charge and intercarrier compensation regimes are in need of fundamental reform, and rulemaking proceedings designed to develop and implement necessary reforms remain pending before the Commission. These regimes were designed to transfer costs and payments among monopoly owners of bottleneck communications facilities, and have little relevance in the context of Internet-based services. It would be a grave mistake to subject next-generation IP-enabled services, and VoIP services in particular, to flawed compensation regimes that are based on legacy network architectures and outdated policies developed to address monopoly control of communications facilities.

Furthermore, in the context of Nuvio's VoIP offerings, LECs are already fully compensated for the origination and termination of communications and enhanced services traffic. For example, in the context of a call originated by and terminated to a Nuvio customer, the traffic is carried between the customer and Nuvio's call servers via the Internet over a broadband connection that is paid for by the Nuvio customer. LECs are compensated through the purchase of end-user numbers for use by Nuvio customers. LECs are also compensated for traffic originating and terminating on the PSTN pursuant to the normal agreements and arrangements between carriers (*e.g.*, LEC and ILEC, IXC and ILEC). Thus, LECs are fully compensated for use of the PSTN in the context of Nuvio's VoIP service.

There is also no practical way to distinguish between various types of IP-enabled services traffic (*e.g.*, a call, voice mail access, etc.) that are delivered from an IP network to the PSTN. As a result, all traffic coming from the Internet to the PSTN should be treated the same for intercarrier compensation purposes. Even assuming it possible to distinguish between VoIP,

other IP-enabled services and "general" Internet traffic for purposes of intercarrier compensation, attempting to do so would significantly increase the cost and impede the development of new VoIP and IP-enabled services.

C. Universal Service

Like the intercarrier compensation regime, there is broad agreement that the Universal Service Fund ("USF") mechanism must be reformed. While the Commission considers appropriate changes to the USF program, it should continue its current policy and refrain from extending legacy regulations such as USF obligation to Internet services, including all IP-enabled services.

It is important to note, however, that Nuvio and other VoIP providers are a retail purchasers of telephone circuits and are charged USF fees by ILECs and CLECs. As a result, contrary to the arguments that VoIP services circumvent the USF system entirely, VoIP providers already contribute significantly to the USF program. Thus, until the Commission reforms its universal service mechanism, there is no need to consider extending it to services like VoIP that already support the program indirectly through retail purchases of telecommunications capacity.

D. Consumer Protection

The Commission also asks whether specific consumer protections, such as customer proprietary network information ("CPNI") requirements, to providers of VoIP and other IP-enabled services.[19] Because Internet-based services are highly competitive, Nuvio believes that the marketplace will sufficiently discipline the conduct of VoIP providers with respect to

[19] *See NPRM* at ¶¶ 71-72.

appropriate consumer protections (*e.g.*, billing requirements, data protection and privacy policies, etc.) without the need for affirmative regulation by the Commission.

Importantly, unlike with many ILECs, consumers have the ability to choose among alternative VoIP providers. VoIP providers generally do not have monopoly access to facilities or customers that would require affirmative consumer protection regulation. That said, as discussed previously, the Commission should ensure that that customers are able to reach their preferred IP-enabled services provider from their residence or business. Owners of bottleneck facilities should not be permitted to discriminate against unaffiliated IP-enabled service providers or otherwise advantage affiliated providers to the detriment of consumers.

E. Common Carrier Regulation

Title II of the Communications Act prohibits common carriers from unjustly or unreasonably discriminating in "charges, practices, classifications, regulations, facilities, or services" against customers.[20] While such regulatory safeguards were necessary in the context of dominant carriers that have monopoly access to facilities and customers, no similar requirements need be imposed on providers of IP-enable services.

The market for IP-enabled services is highly competitive, largely unrestricted by geographic limitations and characterized by a high number of available alternatives and relative ease in choosing or switching among those alternatives. Accordingly, the rational for common carrier-like regulation simply does not exist in the IP-enables services marketplace. The Internet-based services market promotes efficiency, competition and is highly customer-centric, generally eliminating concerns associated with legacy communications networks.

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[20] *Id.* at ¶ 73.

Of course, to function efficiently, customers must be able to access competing IP-enable service providers and those providers must be able to offer services in all desired markets. Thus, to the extent the Commission considers imposing common carrier-like regulation, it should do so only on owners of bottleneck facilities over which IP-enabled services are offered. Non-discriminatory access to such facilities is essential for the benefits of competition and new communications capabilities offered by IP-enabled services to be fully realized.

V. CONCLUSION

For the foregoing reasons, Nuvio respectfully requests that the Commission adopt a unified national policy for IP-enabled services and reaffirm its successful "hands off" approach to IP-enabled services and allow such services to develop in an environment generally unfettered by government regulation. To the extent limited regulation may be required to further specific and compelling public policy objectives, Nuvio urges the Commission to allow market forces and industry initiatives to address such concerns rather than prematurely imposing affirmative regulatory mandates. Finally, as part of any comprehensive regulatory regime, IP-enabled service providers should be afforded non-discriminatory access to bottleneck facilities so that all U.S. consumers can enjoy the full benefits of competition in communications services.

Respectfully submitted,

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May 28, 2004